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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|--|-------------|----------------------|---------------------|------------------|
| 09/426,087 | 10/22/1999 | PAUL R. DRURY | 27754/35306A | 1386 |
| 7590 | 01/28/2004 | | EXAMINER | |
| MARSHALL O'TOOLE GERSTEIN MURRAY & BORUN 6300 SEARS TOWER 233 SOUTH WACKER DRIVE CHICAGO, IL 606066402 | | | FEGGINS, KRISTAL J | |
| | | | ART UNIT | PAPER NUMBER |
| | | | 2861 | |
| DATE MAILED: 01/28/2004 | | | | |

Please find below and/or attached an Office communication concerning this application or proceeding.

| | | |
|------------------------------|-----------------|--------------|
| Office Action Summary | Application No. | Applicant(s) |
| | 09/426,087 | DRURY ET AL. |
| Examiner | Art Unit | |
| K. Feggins | 2861 | |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) Responsive to communication(s) filed on ____.
- 2a) This action is FINAL. 2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) Claim(s) 1-17 is/are pending in the application.
 - 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) Claim(s) 6-17 is/are allowed.
- 6) Claim(s) 1-3 is/are rejected.
- 7) Claim(s) 4 and 5 is/are objected to.
- 8) Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on ____ is/are: a) accepted or b) objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. §§ 119 and 120

- 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 - a) All b) Some * c) None of:
 1. Certified copies of the priority documents have been received.
 2. Certified copies of the priority documents have been received in Application No. ____.
 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.
- 13) Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.
 - a) The translation of the foreign language provisional application has been received.
- 14) Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

Attachment(s)

| | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s). ____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) ____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

In view of the Appeal Brief filed on 7/9/03, PROSECUTION IS HEREBY REOPENED. A new grounds for rejection set forth below.

To avoid abandonment of the application, appellant must exercise one of the following two options:

- (1) file a reply under 37 CFR 1.111 (if this Office action is non-final) or a reply under 37 CFR 1.113 (if this Office action is final); or,
- (2) request reinstatement of the appeal.

If reinstatement of the appeal is requested, such request must be accompanied by a supplemental appeal brief, but no new amendments, affidavits (37 CFR 1.130, 1.131 or 1.132) or other evidence are permitted. See 37 CFR 1.193(b)(2).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-3 are rejected under 35 U.S.C. 103(a) as being unpatentable over Applicant's Admitted Prior Art, (AAPA, Michaells et al., EP 0277 703 A1, in the specification pg 6, lines 5-9, pg 8, lines 28-31) in view of Temple (US 6,582,066).

Michaells et al. (AAPA) discloses the following claimed limitations:

* a fluid chamber having actuator means actuatable by electrical signals to effect ejection of droplets from the fluid chamber (Abstract, col 13, lines 29-55, fig 9);

* drive circuit means/drive circuit (625) sends signals to electrodes (619 & 621)/ for supplying the electrical signals to the actuator mans (col 13, line 45-col 14, line 12, fig 9)

* conduit means/channel/ for conveying droplet fluid to and form said fluid chamber (fig 9), said drive circuit means/electrodes/ being in substantial thermal contact with said conduit means/channels/ so as to transfer a substantial part of the heat generated in said drive circuit to said droplet fluid (col 10, lines 1-17, col 13, line 45-col 14, line 12, fig 9 and in the specification pg 6, lines 5-9, pg 8, lines 28-31).

Temple disclose the following claimed limitations:

* first conduit means/2'/ for supplying droplet fluid to said fluid chamber/14/ and second conduit means/4'/ for leading droplet fluid from said fluid chamber (Abstract, col 3, lines 57-68, col 4, lines 1-6, fig 10).

* wherein said drive circuit means/7'/ is thermally connected to the second conduit means (Abstract, col 3, lines 57-68, col 4, lines 1-6, fig 10).

Allowable Subject Matter

Claims 3-5 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Claims 6-17 are allowed.

The following is an examiner's statement of reasons for allowance: The primary reason for the allowance of claims 6-12 is the inclusion of the droplet deposition

apparatus that includes a support member for at least one droplet ejection, said support member having at least one droplet fluid passageway communication with the plurality of fluid chambers and arranged so as to convey droplet fluid from said fluid chambers in a direction substantially parallel to the nozzle row and to transfer a substantial part of the heat generated during droplet ejection to said conveyed droplet fluid. It is these limitations found in the claims, as they are claimed in the combination of, which has not been found, taught or suggested by the prior art of record that makes these claims allowable over the prior art.

The primary reason for the allowance of claims 13-6-12 is the inclusion of the droplet deposition apparatus that includes a support member for the fluid chamber and including a passageway for supply of droplet fluid to the port, the support member being defined at least in part by a second material having a second coefficient of thermal expansion greater than the first coefficient and means for attaching the fluid chamber to the support in order to substantially avoid transfer of thermal deformation of the support member to the fluid chamber. It is these limitations found in the claims, as they are claimed in the combination of, which has not been found, taught or suggested by the prior art of record that makes these claims allowable over the prior art.

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Temple (US 6582066 B1) disclose a droplet deposition apparatus with first and second channels. Sicking (US 3,930,260) discloses an apparatus for applying a liquid in droplets to a surface. Ishinaga et al. (US 6,290,334 B1) disclose a recording apparatus, recording head and substrate therefore. Swanson

et al. (US 5,896,153) disclose a leak resistant tow-material frame for an ink jet print cartridge.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Communication With The USPTO

Any inquiry concerning this communication or earlier communications from the examiner should be directed to K. Feggins whose telephone number is 703-306-4548. The examiner can normally be reached on M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Stephen Meier can be reached on 703-308-4896. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0956.


K. Feggins
January 23, 2004